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30 AMP MPPT

Solar Charge Controller

User Guide



INTRODUCTION

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The iTechworld 30 Amp MPPT Solar Charge Controller is designed to enhance any solar and battery combination, it works especially well with the iTECH120 lithium battery and iTechworld solar panels. This controller and its charging algorithm is patented by iTechworld. Thanks to the innovative technology in the iTechworld 30 Amp MPPT Solar Charge Controller, you can access the maximum power point of your solar panel which will significantly improve your system. The iTechworld 30 Amp MPPT Solar Charge Controller has a dual menu LCD display and two USB ports for charging mobile devices.

- Advanced MPPT technology with efficiency of 99.5%.
- Maximum conversion efficiency 97%.
- Rapid maximum power point tracking.
- Accurate identification and tracking of the multi wave peak of the maximum power point.
- Constant and reliable maximum input power of the solar panel to ensure safety when charging.
- Wide solar panel operating voltage up to 100v.
- 12/24v automatic voltage detection.









KNOW YOUR GEAR

- 1. LCD
- 2. Temperature sensor
- 3. Solar panel connection point
- 4. Battery connection point
- 5. Load connection point (optional)
- 6. RJ45 Communication interface (factory use only)
- 7. Button
- 8. Dual USB ports
- 9. + Button















- 1. Connect your battery to the battery connection point of the iTechworld 30 AMP MPPT Solar Charge Controller. Optimal cable length from the controller to the battery is 500mm.
- 2. If you wish to use the load feature of the iTechworld 30 AMP MPPT Solar Charge Controller do so by connecting your load to the load connection point. This is optional. More commonly a load is drawn directly from the battery. Please do not connect any inverter to the load connection point. All inverters should be connected to the battery.
- 3. Connect your solar panel to the solar panel connection point of the iTechworld 30 AMP MPPT Solar Charge Controller.
- 4. The controller is now ready to use.







INTERFACE DESCRIPTION

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LCD



Item	ICO	Status
PV array	9	Day
		Night
Battery	.	Uncharged
	°"-""	Charging
	<u>.</u>	Battery power
		Battery type
Load	Ŷ	load open
		load off

BOOT SCREEN



Boot screen













Menu 1 will come on automatically. Press the + and - button to navigate through the 3 display items available in Menu 1. To access Menu 2 press and hold the + button until you enter Menu 2. The controller will return to Menu 1 after 20 seconds if you do not select anything in Menu 2.

First-level browsing interface



















Using the + and - button you can navigate through the 12 display items available in Menu 2. To inspect or change a setting in Menu 2 press and hold the + button on the desired display item until it starts to blink. Use the + and buttons to view more info or to change the setting. If you have changed the setting, press and hold the + button to save the new setting. Before you change any settings, take a note of the current setting your controller is set to, if you make a mistake change it back to the original setting.







BATTERY TYPE

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There are six battery types available in the iTechworld 30 AMP MPPT Solar Charge Controller. User default (AGM), Sealed, Flooded, GEL, LiFePO4, Li(NiCoMn)O2. The following battery types can be modified to suit your set up. Please consult with your battery manufacturer before charging the parameters. User default (AGM), LiFePO4 and Li(NiCoMn)O2 c parameters can be changed. The controller is set from factory to: User default (AGM).







ITECH120 LITHIUM BATTERY SET UP

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The following information is specific to the iTechworld iTECH120 lithium battery. To set the controller for the iTECH120 follow the normal connection procedure as mentioned in the "WIRING" section of this manual. Access Menu 2 and use the + and - buttons to find the display item named "typ usr" press and hold the + button until the word "usr" starts to blink. Now use the + and - to find the "lif" setting now press and hold the + button. You will now be asked to enter the "cap" which represents the capacity of your battery, to get the most accurate reading you should enter the usable capacity of the battery. You can take 80% out of the iTECH120 battery before it goes into safe mode. We recommend you set the "cap" to 100. Please note that if you have more than one battery in parallel (12v) you would enter the correct capacity to suit 1 battery = 100, 2batteries = 200, 3 batteries = 300 and 4 batteries = 400. If you have two batteries in series (24v) the "cap" should be set to 100. Press and hold the + button to save the capacity. Your controller is now ready to use with your iTECH120 battery.





ERROR CODE

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No sun image on LCD - Solar panel is disconnected.

LCD screen wont come on - Battery voltage is too low.

E1 - Battery is over discharged.

E2 - Battery voltage is too high to operate with this controller.

E3 - Over load - the load connected to the controller. Reduce the load.

E5 - Over temperature.

E6- Charging current exceeds 30amps.

E11 - The solar panel has been connected to the controller before the battery. Please refer to the "wiring" section of this user guide and follow the steps 1 to 4 in that exact order.

E12 - You have set your battery type incorrectly.







SPECIFICATIONS

System rated voltage	12/24V Auto recognized
Voltage range of battery	8V-32V

Max open voltage of solar panel	100V	
Battery type	User default, Sealed, Flooded, GEL, LiFePO4, Li(NiCoMn)O2.	
Equalized charging voltage 💥	Maintenance-free lead-acid battery :14.6V,GEL:No;Lead-acid Flooded battery: 14.8V	
Absorption charging voltage *	Maintenance-free lead-acid battery :14.4V,GEL:14.2V ;Lead-acid Flooded battery: 14.6V	
Float charging voltage%	Maintenance-free lead-acid battery, GEL, lead-acid Flooded battery :13.8V Maintenance-free	
LVR ※	lead-acid battery, GEL, lead-acid Flooded battery :12.6V Maintenance-free lead-acid battery,	
LVD ※	GEL, lead-acid Flooded battery :10.8V	
Static loss	≤9.2mA/12 <u>V;≤</u> 11.7mA/24V;	
HVD	16V	
Duration of absorption charging	2hs	
Duration of equalized charging	2hs	
Light control voltage	5V	
Temperature compensation coefficient	-4mV/°C/2V(25°C)	
Charge loop voltage drop	≤ 0.29V	
Discharge loop voltage drop	≤0.16V	
LCD temperature	-20°C ~ +70 °C	
Operating temperature	-20°C ~ +55 °C(To run at full rated current continuously)	
Storage temperature	-30 ~ +80 °C	
Working humidity	≤95%, No condensation	
Protection class	IP30	
Grounded type	Positive grounded	







LOOKING AFTER YOUR GEAR

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Read and understand this users guide before operating your iTechworld 30 AMP MPPT Solar Charge Controller. Use a professional installer to fit this controller. Always consult with your battery and solar panel manufacturer before changing the settings.

If you intend to use this controller with a non iTechworld battery please consult with the battery manufacturer before changing any of the parameters in this controller. It is not the responsibility of iTechworld if you damage your battery by setting your controller incorrectly.









CONTACT

30 AMP MPPT

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